result, the inventors have completed the present disclosure.

[8] The present disclosure provides a method of preparing a filler, which includes: a) mixing a DNA fraction with a solvent to produce a solution; b) removing bacteria from the produced solution using a sterile filter; and c) mixing hyaluronic acid and/or a pH modifier with the bacteria-removed solution.

Summary

[9] The present disclosure provides a filler prepared by the preparation method described above.

[10] The present disclosure provides a pre-filled syringe filled with the filler described above.

[10a] In one aspect, the present disclosure provides a method of preparing a filler, the method comprising:

a) mixing polynucleotide (PN) with a solvent to produce a polynucleotide solution;

b) removing bacteria from the produced polynucleotide solution using a sterile filter; and

c) mixing non-crosslinked hyaluronic acid and a pH modifier with the bacteria-removed polynucleotide solution,

wherein a) to c) are performed sequentially, and

wherein the filler has a complex viscosity of 0.3 to 3 Pa·s at a temperature of 25℃ when being measured with a rheometer.

[10b] In another aspect, the present disclosure provides a

filler prepared by a method described herein.

[10c] In another aspect, the present disclosure provides a pre-filled syringe filled with the filler described herein.

Technical Solution

[11] Hereinafter, the present disclosure will be described in detail. All combinations of a variety of elements disclosed herein fall within the scope of the present disclosure. In addition, the scope of the present disclosure is not deemed to be limited by the detailed description below.

[12]

[13] The preset disclosure provides a method of preparing a filler, which includes: a) step of mixing a DNA fraction with a solvent to produce a solution; b) step of removing bacteria from the produced solution using a sterile filter; and c) step of mixing hyaluronic acid and/or a pH modifier with the bacteria-removed solution.

CLAIMS

1. A method of preparing a filler, the method comprising:

a) mixing polynucleotide (PN) with a solvent to produce a polynucleotide solution;

b) removing bacteria from the produced polynucleotide solution using a sterile filter; and

c) mixing non-crosslinked hyaluronic acid and a pH modifier with the bacteria-removed polynucleotide solution,

wherein a) to c) are performed sequentially, and

wherein the filler has a complex viscosity of 0.3 to 3 Pa·s at a temperature of 25℃ when being measured with a rheometer.

2. The method of claim 1, wherein the polynucleotide has a molecular weight in a range of 1,800 kDa to 6,000 kDa.

3. The method of claim 1, wherein the polynucleotide is comprised at a concentration in a range of 0.5% (w/v) to 2% (w/v) with respect to the total volume of the final filler.

4. The method of claim 1, wherein the solvent is water for injection.

5. The method of claim 1, further comprising stirring the

solution after the mixing of the solvent in the a) mixing of the polynucleotide.

6. The method of claim 5, wherein the polynucleotide is evenly distributed in the solvent.

7. The method of claim 1, wherein the sterile filter has a pore size of 0.2 μm.

8. The method of claim 1, wherein the non-crosslinked hyaluronic acid has a molecular weight in a range of 100 kDa to 5,000 kDa.

9. The method of claim 1, wherein the non-crosslinked hyaluronic acid is contained at a concentration in a range of 0.1% (w/v) to 1% (w/v) with respect to the total volume of the final filler.

10. The method of claim 1, wherein the c) mixing of the non-crosslinked hyaluronic acid and pH modifier comprises:

c-1) mixing the non-crosslinked hyaluronic acid with the bacteria-removed polynucleotide solution produced in the b), to obtain a mixture; and

c-2) mixing the pH modifier with the obtained mixture.

11. The method of claim 1, further comprising mixing an anesthetic agent after the c) mixing of the hyaluronic acid and pH modifier.

12. The method of claim 11, wherein the anesthetic agent is lidocaine or a salt thereof.

13. The method of claim 11, wherein the anesthetic agent is comprised at a concentration of 0.3% (w/v) with respect to the total volume of the final filler.

14. A filler prepared by the method of any one of claims 1 to 13.

15. The filler of claim 14, wherein the filler is used for tissue repair.

16. The filler of claim 14, wherein the filler is used for reducing mild wrinkles or for facial contouring.

17. A pre-filled syringe filled with the filler of claim 14.